

<p>2001-294377/31 A82 G02 (A14) DNIN 1999.07.30 DAIPPON INK & CHEM INC *JP 2001040039-A 1999.07.30 1999-216636(+1999JP-216636) (2001.02.13) C08F 20/36, 2/46, 290/00, C09D 4/02 Active energy ray curing resin composition, used as flexible coating films, comprises (meth)acrylester having carbamate groups C2001-090726</p>	<p>A(4-F6E7, 12-B1E) G(2-A2C)</p>
<p><u>NOVELTY</u> A new active energy ray curing composition comprises a (meth)acrylester having carbamate groups.</p> <p><u>DETAILED DESCRIPTION</u> A new active energy ray curing composition comprises a (meth)acrylester of formula (1) having carbamate groups.</p> $ \begin{array}{c} \text{R}^1 \\ \\ \text{CH}_2=\text{C}-\text{C}(=\text{O})-\text{O}-\text{X}-\text{N}(\text{H})-\text{C}(=\text{O})-\text{O}-\text{C}(=\text{O})-\text{CH}_2 \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \\ \text{O} \qquad \qquad \qquad \text{O} \qquad \qquad \qquad \text{O} \qquad \qquad \qquad \text{O} \end{array} \quad (1) $ <p>R¹ = H or methyl group; X = hydrocarbon group having 2-4C main chain</p> <p><u>USE</u></p>	<p>For forming coating films.</p> <p><u>ADVANTAGE</u> Flexible coating films can be obtained.</p> <p><u>EXAMPLE</u> 2-[(2-acryloyloxy)ethylcarbamoyloxy]ethylacrylate (monomer) was prepared as follows: ethylene carbonate and ethanolamine were reacted to obtain a carbamate diol, which was reacted with acrylic acid in the presence of an esterification catalyst of p-toluene sulphonic acid. A curing composition was prepared by mixing the monomer (50 wt.pts), a urethane acrylate oligomer (50 wt.pts) and an initiator (3 wt.pts).</p> <p><u>TECHNOLOGY FOCUS</u> Polymers - X in formula (1) is formula (2) or (3).</p> <p>JP 2001040039-A+</p>

$\begin{array}{c} \text{---CH-CH}_2\text{---} \\ \\ \text{R}^2 \end{array} \quad (2)$	$\begin{array}{c} \text{---CH}_2\text{CH---} \\ \\ \text{R}^2 \end{array} \quad (3)$ <p> $\text{R}^2 = \text{H or 1-4C alkyl group}$ (6pp056DwgNo.0/0) </p>
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